ORDER NO. ARD83010212C8-06

Service Manual

Mini Cassette

RQ-J55

(Silver)

AC/Battery Mini Stereo Cassette Player
with Light Weight Stereo Headphones

This is the Service Manual for the following areas.
- [D] ..... For all European areas except United Kingdom.
- [B] ..... For United Kingdom.
- [N] ..... For Asia, Latin America, Middle East and Africa areas.
- [A] ..... For Australia.

RQ-346 MECHANISM SERIES

Specifications

Power requirement:	[D] .....AC; with optional AC adaptor RD-9496S [B] .....AC; with optional AC adaptor RP-67 [A][N] ...AC; with optional AC adaptor RP-657 Battery; 6V (four UM-3 (R6) size dry batteries) Car battery; with optional car adaptor RP-917
Motor:	Electrical governor motor
Frequency response:	70—16,000Hz
Track system:	4-track 2-channel stereo playback with included stereo headphones
Tape speed:	4.8cm/s
Fast forward and rewind time:	Approx. 130 seconds with C-60 cassette tape
Input:	DC in; 6V
Output:	Headphones; output level 560mV/ch over (at 16Ω)
Head:	Super permalloy head for playback
Dimensions:	97mm(W)×155mm(H)×40.5mm(D)
Weight:	375g, without batteries

Design & specifications are subject to change without notice.

National / Panasonic

Matsushita Electric Trading Co., Ltd.
P.O. Box 288, Central Osaka Japan

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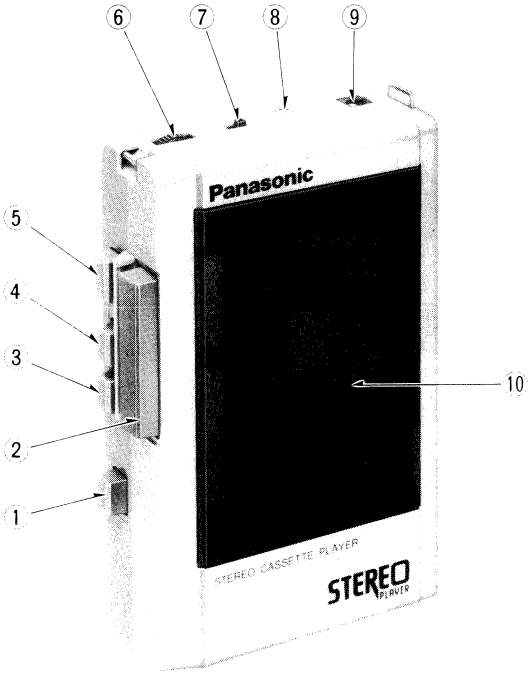
LOCATION OF CONTROLS AND COMPONENTS



① Pause button
② Playback button
③ Fast forward/cue button
④ Rewind/review button
⑤ Stop/eject button
⑥ Volume control
⑦ Tape selector (Normal/Metal)
⑧ Headphones jack
⑨ External AC power adaptor jack
⑩ Cassette compartment cover

DISASSEMBLY INSTRUCTIONS

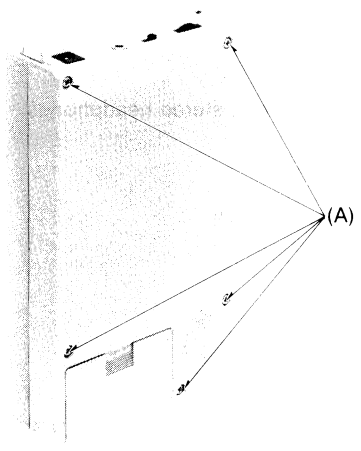


Fig. 1

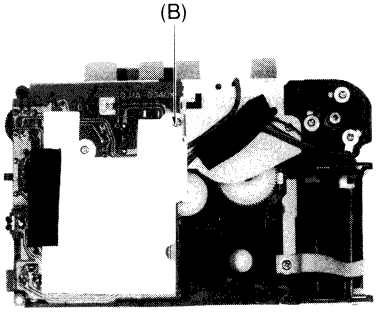


Fig. 2

Procedure	To remove —.	Remove —.	Shown in fig. —.
1	Bottom case and main case assembly	• 5 screws .....(A)	1
2	Main circuit board	• 1 screw .....(B)	2

Assembly note:

When installing the printed circuit board on the mechanism unit, note the following:

Check that the power ON/OFF switch (S1) is placed in its specified position as shown in fig. 3.

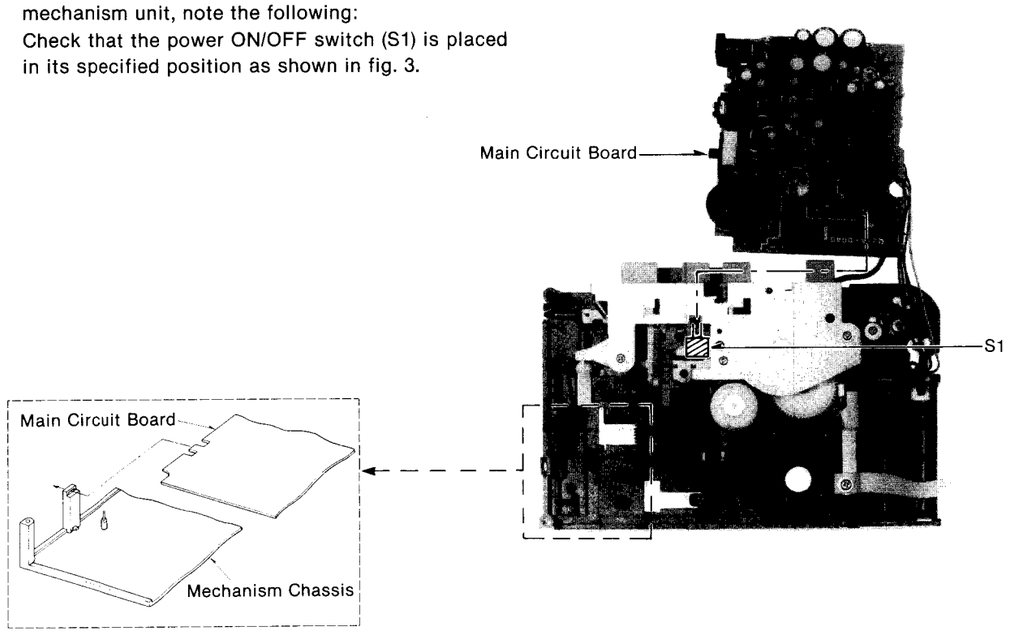


Fig. 3

MEASUREMENT AND ADJUSTMENT METHODS

NOTES:
- Make sure head is clean.
- Make sure capstan and pressure roller are clean.
- Judgeable room temperature: 20±5°C (68±9°F)
- Volume control: Maximum
- Tape select switch: Normal

Head azimuth adjustment

Condition:
- Playback mode

Equipment:
- VTVM • Oscilloscope
- Test tape (azimuth)...QZZCFM
- Stereo M3 plug
- Resistor (16Ω)

1. Test equipment connection is shown in fig. 1 and 2.
2. Playback azimuth tape (QZZCFM 8kHz).
3. Adjust playback head angle adjustment screw (A) in fig. 3 so that output level becomes maximum.
4. After adjustment lock head adjustment screw with lacquer.

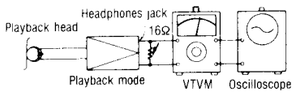


Fig. 1

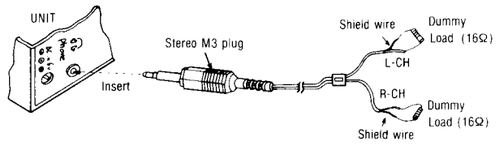


Fig. 2

Fig. 3

Tape speed accuracy adjustment

Condition:
- Playback mode

Equipment:
- Digital electronic counter or frequency counter
- Test tape...QZZCWAT
- Stereo M3 plug
- Resistor (16Ω)

1. Test equipment connection is shown in fig. 2 and 4.
2. Playback test tape (QZZCWAT 3,000Hz), and supply playback signal to frequency counter.
3. Take measurement at middle section of test tape.
4. Measure this frequency.
5. On the basis of 3,000Hz, determine value by following formula:

$$\text{Tape speed accuracy} = \frac{f-3{,}000}{3{,}000} \times 100(\%)$$

where, f = measured value

Standard value: ±3%

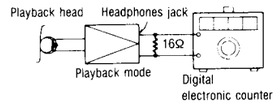


Fig. 4

6. If measured value is not within the standard, adjust tape speed adjustment VR (shown in cabinet parts location), so that frequency becomes 3,000Hz.

Playback frequency response

Condition:
- Playback mode

Equipment:
- VTVM • Oscilloscope
- Test tape...QZZCFM
- Stereo M3 plug
- Resistor (16Ω)

1. Test equipment connection is shown in fig. 1 and 2.
2. Playback frequency response test tape (QZZCFM).
3. Measure output level at 315Hz, 125Hz, 1kHz, 4kHz, 8kHz and compare each output level with standard frequency 315Hz, at the headphones jack.
4. Make measurement for both channels.
5. Make sure that the measured value is within the range specified in the frequency response table (shown in fig. 5).

Playback frequency response table

125Hz	−1±5dB
315Hz	0dB
1kHz	0±4dB
4kHz	−0.5±4dB
8kHz	−2±5dB

Fig. 5

Playback gain

Condition:
- Playback mode

Equipment:
- VTVM • Oscilloscope
- Test tape...QZZCFM
- Stereo M3 plug
- Resistor (16Ω)

Measurement (R-CH)

1. Test equipment connection is shown in fig. 1 and 2.
2. Playback standard recording level portion on test tape (QZZCFM 315Hz, 0dB), and using VTVM measure the output level at the headphones jack.
3. Make measurement for R-CH.

Standard value: greater than 0.565V

4. If measured value is not within standard, short the connection point (A) (shown in fig. 6) by soldering.

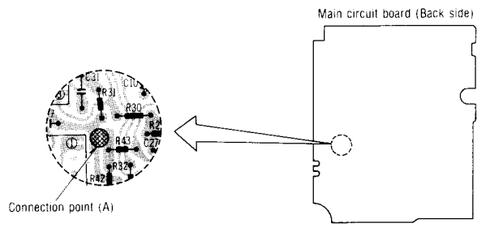


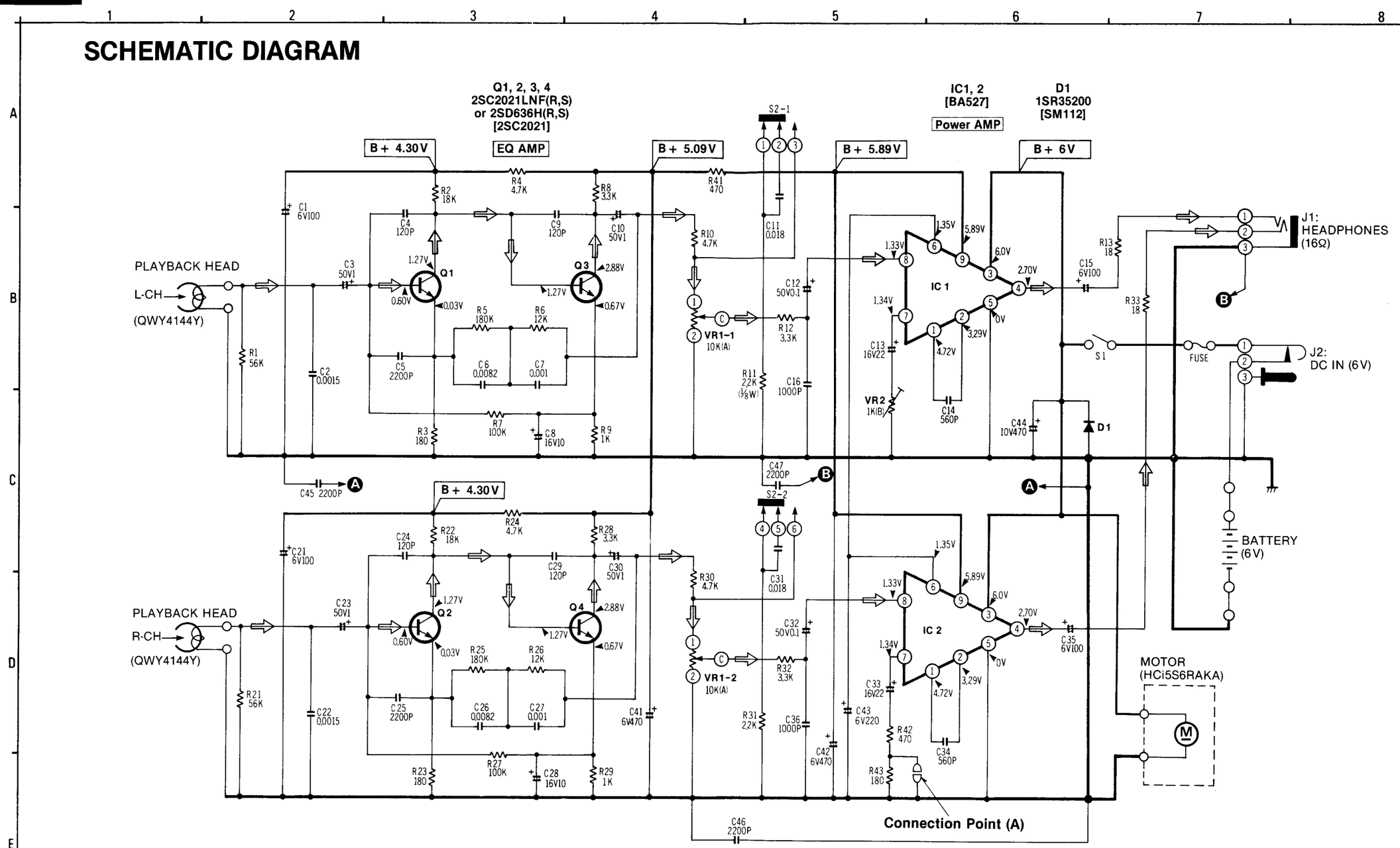
Fig. 6

Channel balance adjustment

5. Make measurement for both channels in same manner as above (Steps 1 and 2).
6. If outputs of both channels are not equal, adjust VR2 (for L-CH adjustment) so that L-CH output is identical to R-CH output. (Shown in circuit board and wiring connection diagram.)

Reference value: R-CH output level = L-CH output level ±3dB

SCHEMATIC DIAGRAM



SPECIFICATIONS * Volume control...MAX

Playback S/N ratio * Test tape...QZZCFM (Use AC adaptor: 6V)	More than 40dB (without NAB filter)

NOTES:

- S1.....Power ON/OFF switch (shown in OFF position).
- S2-1, 2-2 .....Tape select switch (shown in NORMAL position).
- VR1-1, 1-2 .....Volume control.
- VR2 .....Playback gain adjustment VR (L-CH).
- Connection point (A).....For playback gain adjustment point (R-CH).
- Resistance are in ohms (Ω), 1/4 watt unless specified otherwise.
  K = 1,000Ω, M = 1,000KΩ.
- Capacity are in microfarads (μF) unless specified otherwise.
  P = Pico-farads.
- All voltage values shown in circuitry are under no signal condition and playback mode with control at maximum position.
  For measurement, use VTVM.
- (⇨) this arrow indicates the flow of the playback signal.
- Described in the schematic diagram are two types of numbers; the supply parts number and production parts number for transistors and diodes. One type of number is used for supply parts number and production parts number when they are identical.

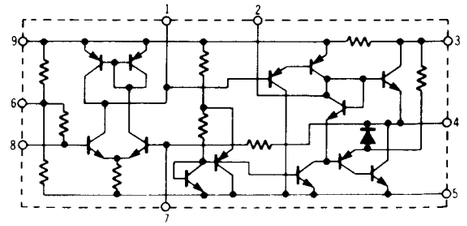
e.g. Q1
2SC2021LNF(R,S)—Production parts number
or 2SD636H(R,S)
[2SC2021]—Supply parts number
D1
1SR35200—Production parts number
[SM112]—Supply parts number

- **The supply parts number is described alone in the replacement parts list.**

- **This schematic diagram may be modified at any time with the development of new technology.**

EQUIVALENT CIRCUITS

IC1, 2 BA527



ELECTRICAL PARTS LIST

NOTES: RESISTORS
- ERD.....Carbon
- ERG .....Metal-oxide
- ERS.....Metal-oxide
- ERO .....Metal-film
- ERX.....Metal-film
- ERQ .....Fuse type metallic
- ERC.....Solid
- ERF.....Cement

CHIP RESISTORS
- RRD .....Carbon

CHIP CAPACITORS
- QCU□.....Ceramic

CAPACITORS
- ECBA .....Ceramic
- ECG□.....Ceramic
- ECK□ .....Ceramic
- ECC□ .....Ceramic
- ECF□ .....Ceramic
- ECQM.....Polyester film
- ECQE .....Polyester film
- ECQF .....Polypropylene
- ECE□ .....Electrolytic
- ECE□N ...Non polar electrolytic
- ECQS .....Polystyrene
- ECS□ .....Tantalum
- QCS .....Tantalum

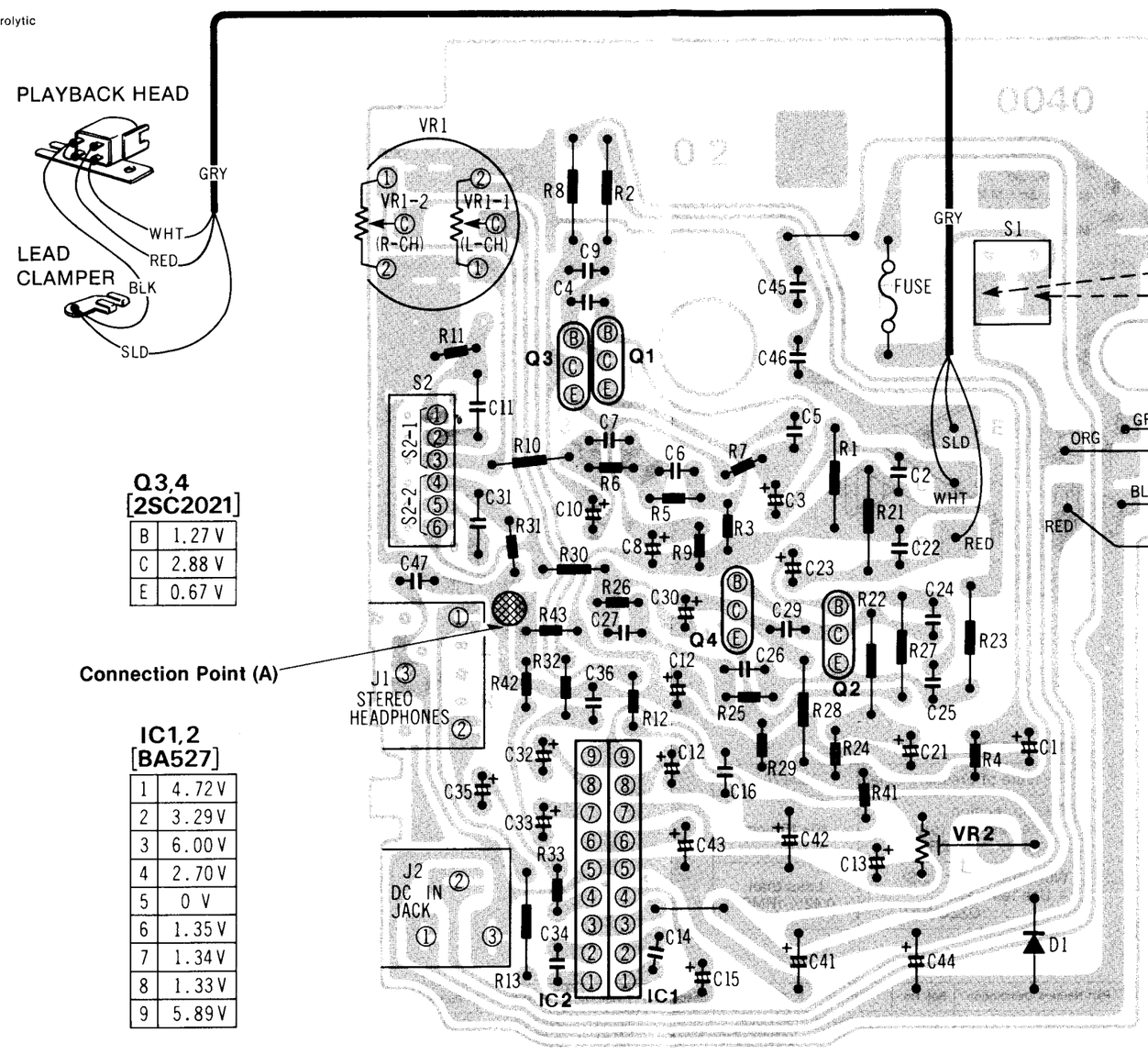
REPLACEMENT PARTS LIST

Ref. No.	Part No.
RESISTORS	
R 1	ERD25TJ563
R 2	ERD25TJ183
R 3	ERD25FJ181
R 4	ERD25FJ472
R 5	ERD25TJ184
R 6	ERD25TJ123
R 7	ERD25TJ104
R 8	ERD25FJ332
R 9	ERD25FJ102
R 10	ERD25FJ472
R 11	ERD10TJ222
R 12	ERD25FJ332
R 13	ERD25FJ180
R 21	ERD25TJ563
R 22	ERD25TJ183
R 23	ERD25FJ181
R 24	ERD25FJ472
R 25	ERD25TJ184
R 26	ERD25TJ123
R 27	ERD25TJ104
R 28	ERD25FJ332
R 29	ERD25FJ102
R 30	ERD25FJ472
R 31	ERD25FJ222
R 32	ERD25FJ332
R 33	ERD25FJ180
R 41, 42	ERD25FJ471
R 43	ERD25FJ181
VARIABLE RESISTORS	
VR 1	EVUCAAT65A14
VR 2	EVNM4AA00B13
CAPACITORS	
C 1	ECEA1AS101
C 2	ECFDD152KBL
C 3	ECEA50Z1
C 4	ECKD1H121KB
C 5	ECKD1H222ZF
C 6	ECFDD822KBL
C 7	ECFDD102KBL
C 8	ECEA1HS100
C 9	ECKD1H121KB
C 10	ECEA50Z1
C 11	ECFDD183KBL
C 12	ECEA50ZR1
C 13	ECEA1ES220
C 14	ECKD1H561KB
C 15	ECEA1AS101
C 16	ECKD1H102ZF
C 21	ECEA1AS101
C 22	ECFDD152KBL
C 23	ECEA50Z1
C 24	ECKD1H121KB
C 25	ECKD1H222ZF
C 26	ECFDD822KBL
C 27	ECFDD102KBL
C 28	ECEA1HS100
C 29	ECKD1H121KB
C 30	ECEA50Z1
C 31	ECFDD183KBL
C 32	ECEA50ZR1
C 33	ECEA1ES220
C 34	ECKD1H561KB
C 35	ECEA1AS101
C 36	ECKD1H102ZF
C 41, 42	ECEA0JS471
C 43	ECEA1AS221
C 44	ECEA1ASS471
C 45, 46, 47	ECKD1H222ZF
TRANSISTORS	
Q 1, 2, 3, 4	2SC2021
DIODE & RECTIFIER	
D 1	SM112
INTEGRATED CIRCUITS	
IC 1, 2	BA527

Ref. No.	Part No.	Part Name & Description
SWITCHES		
S 1	QSB0256	Leaf Switch (Power ON/OFF)
S 2	QSS4215	Slide Switch (Tape Selector)
JACKS		
J 1	QJA0173	M3 Jack (Headphones)
J 2	QJA0177	DC IN Jack

NOTES:
- BLK.....Black
- BLU.....Blue
- BRN.....Brown
- GRY.....Gray
- GRN .....Green
- L. BLU ....Light Blue
- NIL.....No Color Mark
- ORG .....Orange
- PNK.....Pink
- RED.....Red
- SLD .....Shield Wire
- VLT.....Violet
- WHT.....White
- YEL.....Yellow

CIRCUIT BOARD AND WIRING CONNECTION DIAGRAM



Q3,4 [2SC2021]

B	1.27 V
C	2.88 V
E	0.67 V

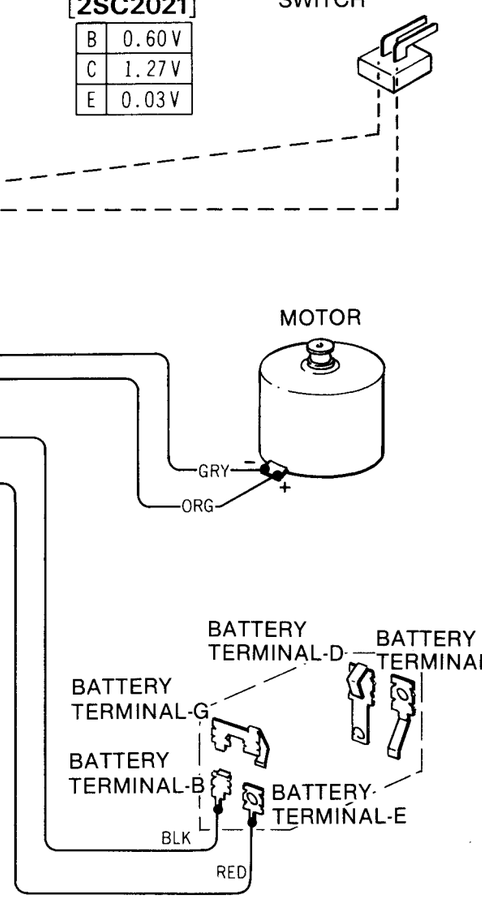
IC1,2 [BA527]

1	4.72 V
2	3.29 V
3	6.00 V
4	2.70 V
5	0 V
6	1.35 V
7	1.34 V
8	1.33 V
9	5.89 V

Q1,2 [2SC2021]

B	0.60 V
C	1.27 V
E	0.03 V

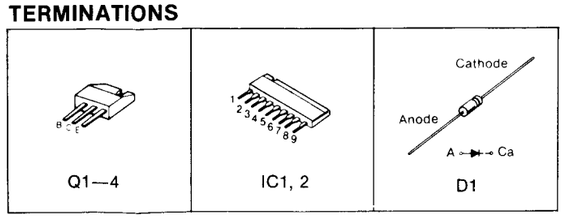
S1: POWER ON/OFF SWITCH



NOTES:
- The circuit shown in ▒▒▒ on the conductor indicates printed circuit on the back side of the printed circuit board.
- Valued indicates in ☐ are under no signal condition and playback mode with volume control at maximum position. For measurement, use VTVM.

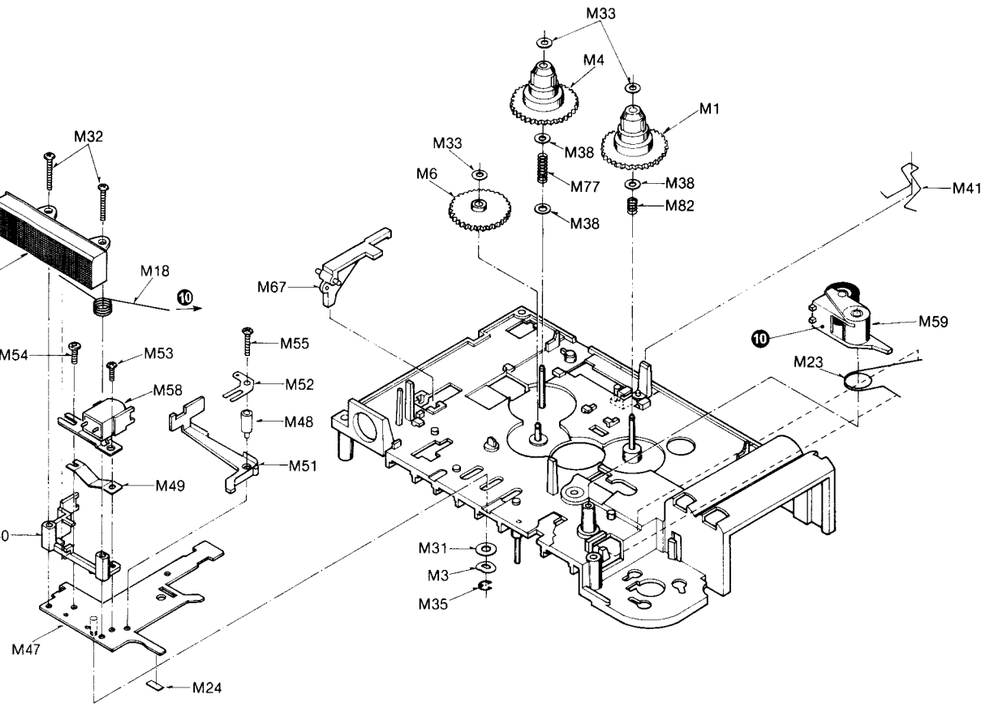
- **This circuit board diagram may be modified at any time with the development of new technology.**

TERMINATIONS

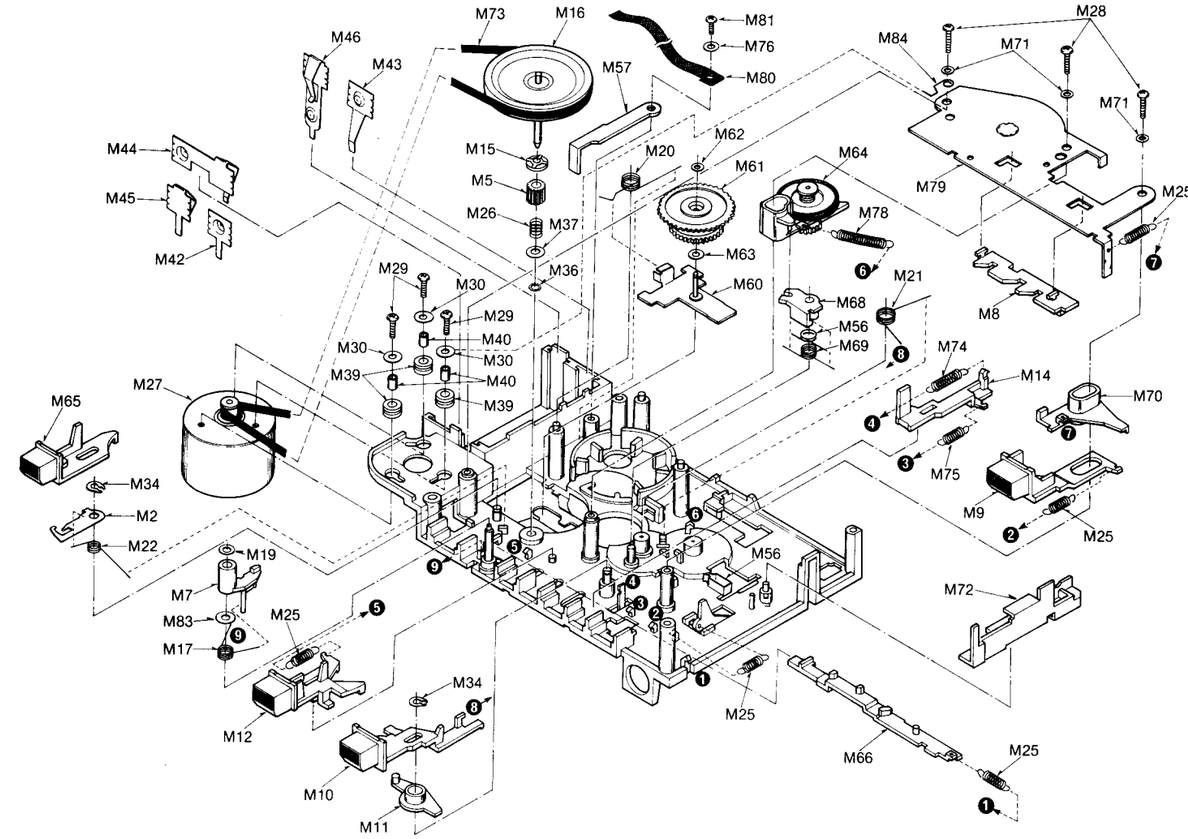


MECHANICAL PARTS LOCATION

(Front View)



(Rear View)



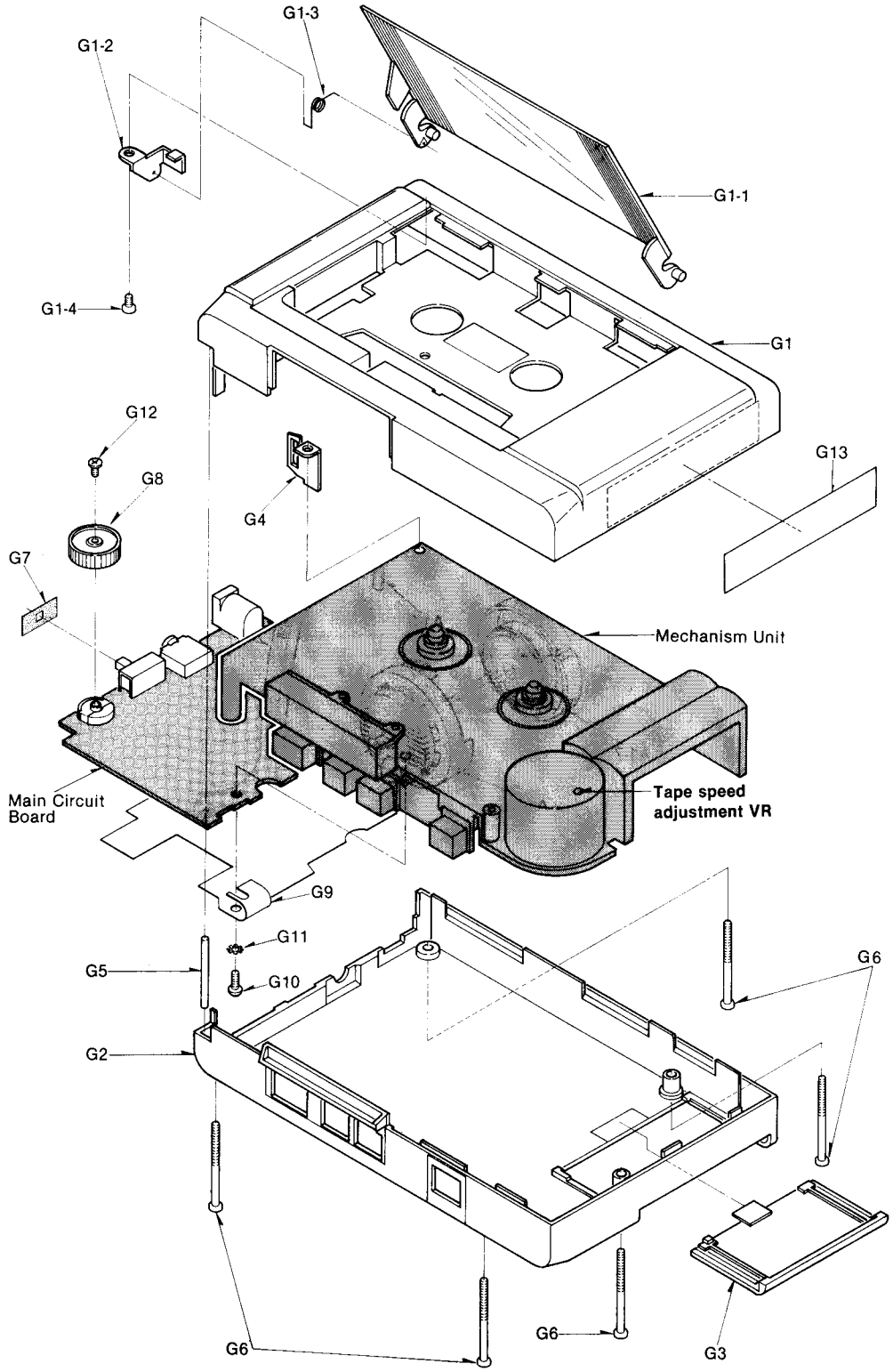
SPECIFICATIONS

Pressure of pressure roller	380±70g
Takeup tension * Use cassette torque meter.....QZZRKCT	40±15g-cm
Wow and flutter: (JIS) * Use test tape .....QZZCWAT	Less than 0.42% (RMS)

REPLACEMENT PARTS LIST

Ref. No.	Part No.	Part Name & Description
		MECHANICAL PARTS
M 1	QDR1165	Takeup Reel Table Assembly
M 2	QML3950	Pause Lock Lever
M 3	QBP1519	Spring Washer
M 4	QDR1163	Supply Reel Table Assembly
M 5	QDG1276	Flywheel Gear
M 6	QDG1277	Rewind Gear
M 7	QML3953	Auto-Stop Lever
M 8	QMR2047	Switch Rod
M 9	QMR2048	Stop Rod
M 10	QMR2051	Rewind Rod
M 11	QML3958	Cue Lever
M 12	QMR2053	Fast Wind Rod
M 13	QGO2170	Playback Button
M 14	QMR2049	Playback Rod
M 15	QMD0024	Auto-Stop Cam
M 16	QXF0204	Flywheel Assembly
M 17	QBN1926	Auto-Stop Lever Spring
M 18	QBN1928	Pressure Roller Spring
M 19	QWQT0005	Washer 2.1φ
M 20	QBN1930	Idler Lever Spring
M 21	QBN1931	Rewind Rod Spring
M 22	QBN1933	Pause Lock Lever Spring
M 23	QBN1934	Pause Rod Spring
M 24	QTW1175	Spacer (for Head Base Plate)
M 25	QBT1901	Lock Rod Spring
M 26	QBC1424	Flywheel Spring
M 27	HCi5S6RAKA	DC Motor
M 28	XTN2+8B	Tapping Screw ⊕2×8
M 29	XSN2+6	Screw ⊕2×6
M 30	XWE2A7	Washer 2φ
M 31	XWE3A7BW	Washer 3φ
M 32	XSN2+12	Screw ⊕2×12
M 33	QBW2008	Washer 1.6φ
M 34	XUE3FT	Stop Ring 3φ
M 35	XUC2FT	Stop Ring 2φ
M 36	QBJA0005	Washer 2.6φ
M 37	QBJ3098	Washer 2.7φ
M 38	QBW2010	Washer 2.1φ
M 39	QBG1750	Motor Rubber
M 40	QMC0147	Motor Collar
M 41	QBN1843	Cassette Retainer Spring
M 42	QJB0167	Battery Terminal-E
M 43	QJB0166	Battery Terminal-F
M 44	QJB0168	Battery Terminal-G
M 45	QJB0158	Battery Terminal-B
M 46	QJB0159	Battery Terminal-D
M 47	QXK2663	Head Base Plate Assembly
M 48	QMC0148	Collar
M 49	QBP1969	Head Spring
M 50	QMG0116	Head Spacer
M 51	QML3951	Auto-Stop Detection Lever
M 52	QTD1318	Lead Clamper
M 53	XSN2+5	Screw ⊕2×5
M 54	XSN2+10	Screw ⊕2×10
M 55	XSN2+8	Screw ⊕2×8
M 56	QBN1948	Fast Wind Lever Spring-B
M 57	QMA4578	Idler Holding Plate
M 58	QWY4144Y	Playback Head
M 59	QXL1626	Pressure Roller Assembly
M 60	QXL1568	Idler Lever Assembly
M 61	QXG1070	Idler Gear Assembly
M 62	QBW2030	Washer 1.15φ
M 63	QBW2010	Washer 2.1φ
M 64	QXL1570	Fast Wind Idler Lever Assembly
M 65	QXR0847	Pause Rod Assembly
M 66	QMR2052	Pause Lock Lever
M 67	QML3954	Cassette-up Lever
M 68	QML3957	Fast Wind Lever
M 69	QBN1932	Fast Wind Lever Spring
M 70	QML3955	Eject Lever
M 71	XWG2	Washer 2φ
M 72	QKJA0047	Jack Holder
M 73	QDB0203	Flywheel Belt
M 74	QBT1975	Head Base Spring
M 75	QBT1976	Playback Rod Spring
M 76	XWE3	Washer 3φ
M 77	QBC1430	Back Tension Spring-A
M 78	QBT1977	Fast Wind Idler Spring
M 79	QXK2661	Lower Base Plate Assembly
M 80	QBJK0062	Battery String
M 81	XTN26+8B	Tapping Screw ⊕2.6×8
M 82	QBC1431	Back Tension Spring-B
M 83	QBW2114	Washer 3.7φ
M 84	QBN1983	Earth Spring

CABINET PARTS LOCATION

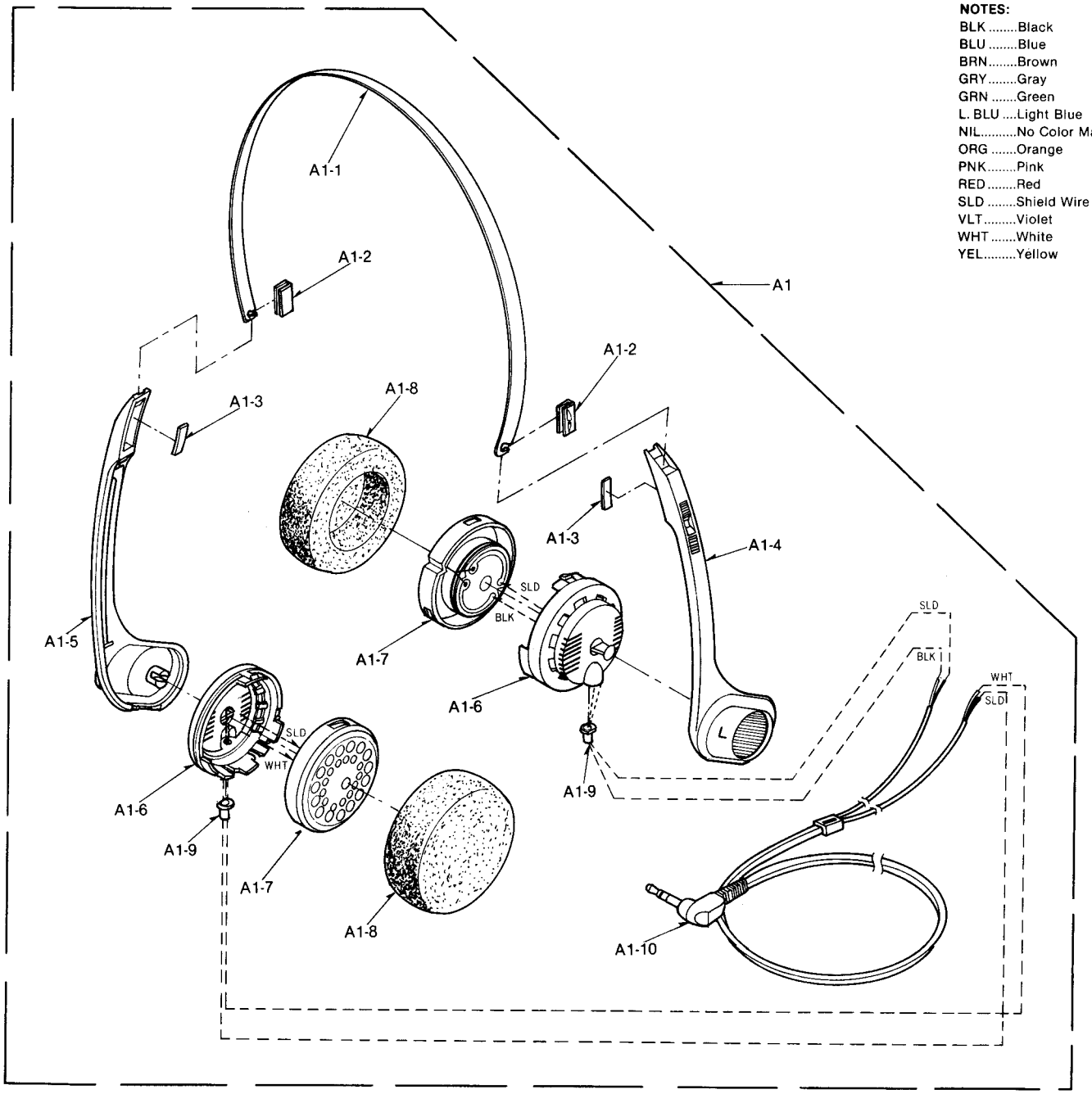


REPLACEMENT PARTS LIST

Ref No.	Part No.	Part Name & Description
	CABINET PARTS	
G 1 [DB]	QYMA0188S	Main Case Assembly [For all European areas.]
[AN]	QYMA0187S	Main Case Assembly [For Australia, Asia, Latin America, Middle East and Africa areas.]
G 1-1	QKFA2019H	Cassette Lid
G 1-2	QMA4475	Lid Holding Plate
G 1-3	QBN7016	Lid Spring
G 1-4	XTN26+6B	Tapping Screw
G 2	QKMA0091S	Bottom Case
G 3	QKFA4004S	Battery Cover
G 4	QMA4562	Strap Hook
G 5	QMS1970	Hand Strap Pin
G 6	XTN26+30BFN	Tapping Screw ⊕2.6×30
G 7	QKJA0042	Switch Shelter
G 8	QGT1622	Volume Knob
G 9	QTSA0021	Shield Plate
G 10	XSN2+6	Screw ⊕2×6
G 11	XWC2B	Washer 2φ
G 12	XQN17B28FZ	Screw ⊕1.7×2.8
G 13 [AN]	QGSA0084	Main Name Plate [For Australia, Asia, Latin America, Middle East and Africa areas.]

HEADPHONES PARTS LOCATION

Stereo Headphones Assembly: RP9513XP/RP9513XN



REPLACEMENT PARTS LIST

Ref No.	Part No.	Part Name & Description
		ACCESSORIES
A 1 [DB]	RP9513XP	Stereo Headphones Assembly
		[For all European areas.]
[AN]	RP9513XN	Stereo Headphones Assembly
		[For Australia, Asia, Latin America, Middle East and Africa areas.]
A 1-1	QMF2300	Headphones Band
A 1-2	QKJ0641	Stopper
A 1-3	QKJ0645	Pressure Plate
A 1-4[DB]	QKJ0642	Unit Holder-L
		[For all European areas.]
[AN]	QKJ0651	Unit Holder-L
		[For Australia, Asia, Latin America, Middle East and Africa areas.]
A 1-5[DB]	QKJ0643	Unit Holder-R
		[For all European areas.]
[AN]	QKJ0652	Unit Holder-R
		[For Australia, Asia, Latin America, Middle East and Africa areas.]
A 1-6	QKJ0644	Housing
A 1-7	QYM0894	Speaker Assembly
A 1-8	QBM1328	Ear Pad
A 1-9	QBG1758	Cord Protector
A 1-10	QEB0164	Headphones Cord
A 2	QZC0015	Shoulder Strap
A 3 [DB]	QQT3395	Instruction Book
		[For all European areas.]
[AN]	QQT3394	Instruction Book
		[For Australia, Asia, Latin America, Middle East and Africa areas.]
A 4 [AN]	QFTC07L003NZ	Demonstration Tape
		[For Australia, Asia, Latin America, Middle East and Africa areas.]
		PACKINGS
P 1 [DB]	QPNA0169	Inside Carton
		[For all European areas.]
[AN]	QPNA0168	Inside Carton
		[For Australia, Asia, Latin America, Middle East and Africa areas.]
P 2	XZB16X27A02	Poly Bag (for UNIT)
P 3	QPWA0016	Accessory Box
P 4	QPAA0085	Cushion
P 5	QPAA0089	Spacer (for Headphones)

ASA
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